EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Nathaniel Wallace on 3 March 2010, 24 March 2010 and 27 March 2010.

Amendments to the Claims

3. This listing of claims will replace all prior versions and listings of claims in this application.

Listing of claims:

1. (Canceled)

2. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, wherein collecting realized order data comprises continuously collecting new realized order data and using the likelihood and the new realized order data to generate a revised sales plan.

3. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, further comprising formulating a multistage stochastic program comprises formulating the multistage stochastic program using IBM OSL Stochastic Extensions.

4. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, further comprising formulating a multistage stochastic program that generates a quantity of each product to be sold in each of the multiple time periods and a recommendation comprises formulating a multistage stochastic program that generates a quantity of each product to be sold in each of the multiple time periods and a recommendation for pricing each of the multiple products.

5. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, wherein estimating the likelihood comprises determining a demand forecast and comparing the demand forecast and the planned sales volume.

6. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, further comprises executing a multistage stochastic program using the likelihood to generate a sales plan for pricing each of the multiple products.

7. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, wherein collecting realized order data comprises collecting realized order data from an Internet website.

8. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, wherein collecting realized order data comprises collecting realized order data from a point-of-sale terminal.

9. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, wherein collecting realized order data comprises collecting realized order data from a reverse auction.

10. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~1~~ 20, further comprising keeping a counter of the quantity of realized order data being collected.

11. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~10~~ 20, further comprising calculating a confidence level representing a probability that the realized order data will be outside the range of a confidence interval.

12. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~11~~ 20, wherein the confidence level is calculated using a normal distribution program upon determining that the counter has a value above a threshold.

13. (Currently Amended) The ~~method~~ machine-readable medium of claim ~~11~~ 20, wherein the confidence level is calculated using a gamma distribution program upon determining that the counter has a value below a threshold.

14. (Canceled)

15. (Currently Amended) An apparatus for developing an optimal sales plan for multiple products with multiple price classes contingent on different possible realizations of uncertain demand over multiple time periods with the objective of maximizing expected revenue over a constrained capacity, the apparatus comprising:

a processor;

a memory;

a stochastic programming engine for formulating and executing a multistage stochastic program that generates (i) a strategic decision model for prescribing a sales plan indicating a quantity of each product to be sold in each of the multiple time periods, and (ii) a tactical decision model for generating an economic indicator to accept an order for at least one of the multiple products according to the sales plan and on-hand inventory at a time when demand exceeds a planned sales volume for at least one of the multiple time periods; and

a trigger engine collecting realized order data and determining that a demand scenario is realized for the at least one of the multiple products for a given time period and providing an indication of when to re-determine the sales plan upon determining that the demand scenario for the at least one of the multiple products for the given time period exceeds the planned sales volume, wherein the sales plan is re-determined according to the indication of the trigger engine and the re-determined sales plan is used by the tactical decision model for generating the economic indicator and for determining a supply of the multiple products in the multiple price classes.

16. (Original) The apparatus of claim 15, wherein the trigger engine comprises a set of decision variables.

17. (Original) The apparatus of claim 16, wherein the set of decision variables comprising:

a variable indicating the planned sales volume of one of the multiple products in one of the multiple price classes;

a variable indicating the quantity of one of the multiple products in one of the multiple price classes manufactured in a current time period to be sold in a next time period; and

a variable indicating the quantity of one of the multiple products in one of the multiple price classes manufactured in the current time period to be sold in the current time period.

18. (Original) The apparatus of claim 15, wherein the strategic decision model comprises:

a profit function that accounts for total revenue for each of multiple products, wherein the profit function comprises:

a production constraint;

a demand constraint; and

a service level constraint.

19. (Original) The apparatus of claim 18, wherein the profit function further comprises an on-hand inventory constraint.

20. (Currently Amended) A non-transitory machine-readable medium having instructions stored thereon for execution by a processor to perform a method of developing an optimal sales plan for multiple products with multiple price classes contingent on different possible realizations of uncertain demand over multiple time periods with the objective of maximizing expected revenue over a constrained capacity, the method comprising:

determining a strategic model by the processor having an allocation of each of the multiple products across the multiple price classes to be sold in each of the multiple time periods;

estimating a likelihood by the processor that the demand for each of the multiple products exceeds the allocation at the price class for each of the multiple time periods;

collecting realized order data by a trigger engine using the processor for the multiple products at each of the multiple price classes and for each of the multiple time periods;

~~generating~~ re-determining a sales plan by a tactical decision model using the processor based on the likelihood and the realized order data at each of the multiple price classes and for each of the multiple products within a current time period upon determining that the demand for the at least one of the multiple time periods exceeds the allocation for the given product at the price class; and

determining an economic indicator using the tactical decision model and the processor based on the ~~generated~~ re-determined sales plan to accept an order for a given product of the multiple products upon determining that the demand exceeds the allocation for the given product at a price class in at least one of the multiple time periods.

ALLOWANCE

4. The following is an Allowance in response to the Amendment submitted on 22 October 2009 and telephonic communications with Applicant's representative on 3 March 2010.
5. Claims 2 – 13, 15 and 20 are currently amended.
6. Claims 1 and 14 are cancelled.
7. Claims 2 – 13 and 15 – 20 are currently pending and allowed below.

REASONS FOR ALLOWANCE

8. The following is an examiner's statement of reasons for allowance.
9. The present invention, as per claim 15, is directed to an apparatus for performing the steps for developing an optimal sales plan for multiple products with multiple price classes contingent on different possible realizations of uncertain demand over multiple time periods with the objective of maximizing expected revenue over a constrained capacity. The present invention formulates a multistage stochastic program that encompasses a stochastic programming engine, a trigger engine and an economic indicator where the stochastic programming engine generates a quantity of each of the multiple products to be sold in each of the multiple time periods and the trigger engine generates a recommendation for when realized demand for at least one of the multiple time periods exceeds a planned sales volume; estimates a likelihood that the realized demand for the at least one of the multiple time periods exceeds the planned sales volume and generates an economic indicator for accepting bids when demand exceeds supply; and collects realized order data for each of the multiple time periods; and executes the multistage stochastic program using the likelihood and the realized order data to generate a sales plan.
10. The invention, as per claim 20, further encompasses determining a strategic model having an allocation of multiple products across multiple price classes and time periods, estimating the likelihood that demand for each of the products exceeds the allocation at each price class for each time period, and collecting realized order data using a tactical trigger engine and re-determining a

sales plan by a tactical decision model based on the likelihood and the realized order data that the demand for at least one of the time periods exceeds the allocation for a given product of a price class, and determining an economic indicator using the tactical model and the re-determined sales plan to accept an order for a given product where the demand exceeds the allocation for the given product at a price class in at least one time period.

11. The closest prior art of Ahmed, et al. (*A Multi-Stage Stochastic Integer Programming Approach for Capacity Expansion Under Uncertainty*), Bichler, et al. (*Applications of Flexible Pricing in Busines-to-Business Electronic* Commerce) and Tezuka, et al. (US PgPub 20030167146 A1) fail to teach or suggest either singularly or in combination the dynamic decision-making method steps as recited in independent Claims 15 and 20. Specifically, none of the prior art teach generating and using both a strategic and tactical engine or model to generate a new sales plan where a decision to accept a bid when demand exceeds the current plan's allocation has been made, nor does any of the prior art teach generating an economic indicator using the tactical engine or model for accepting a bid when demand exceeds the current plan's allocation for a given product of a given price class in a given time period and then re-determining a sales plan as disclosed in the present invention.

12. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Mark A. Fleischer** whose telephone number is **571.270.3925.** The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's acting supervisor, **Beth Boswell** whose telephone number is **571.272.6737** may be contacted.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://portal.uspto.gov/external/portal/pair <http://pair-direct.uspto.gov >. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free). Any response to this action should be mailed to:

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Examiner, Art Unit 3624 27 March 2010

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